

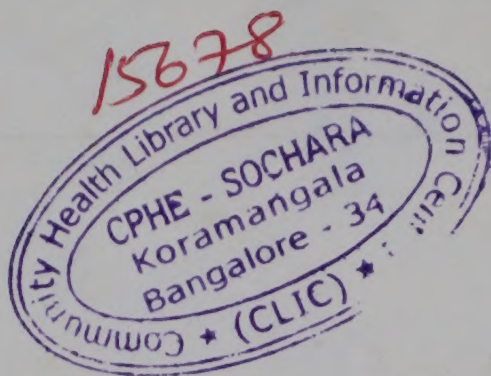
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Development of cancer centres and community cancer control programmes

Report on a WHO Working Group

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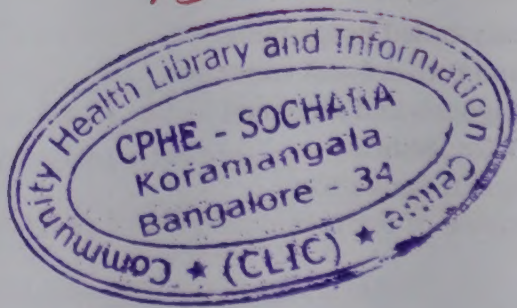
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INTRODUCTION

A Working Group on the Development of Cancer Centres and Community-based Control Programmes was convened in Luxembourg from 20 to 22 October 1981 by the WHO Regional Office for Europe in association with the Government of the Grand Duchy of Luxembourg. The Working Group of 17 members included clinicians involved in cancer care, directors of cancer centres, cancer epidemiologists and public health administrators responsible for national cancer control programmes, together with a WHO consultant and two WHO staff members.

The Working Group elected Dr M. Dicato as its Chairman and Dr S. Harvei as Vice-Chairman. Dr R. J. Wrighton acted as Rapporteur and Professor W. K. Jasinski as Secretary. The full list of participants is given as Annex 5. The Group conducted all its business in full session.

At the start of the meeting Dr Leo A. Kaprio, Regional Director, WHO Regional Office for Europe, invited Dr E. Duhr, Director of Health for the Grand Duchy of Luxembourg, to open the proceedings. On behalf of Dr E. Krieps, Minister of Health of the Grand Duchy of Luxembourg, Dr Duhr welcomed the members of the Working Group. He referred to the importance of cancer as a major health problem for the Region, the control of which was made more difficult by the notorious public image of the disease and the complexity of its treatment. He considered that more efforts were needed in the education of the public about the causes of cancer and the measures needed to reduce exposure to cancer-causing agents in the general environment and in the individual's own daily life. The more precise identification and measurement of risk factors in cancer was a very important task and the proper application of such knowledge could greatly reduce cancer morbidity and mortality. Until this could be achieved, however, it was vital to make people more aware of the possibilities for the successful management of cancer and to encourage people to come forward for early diagnosis of suspicious symptoms. The disease of cancer must be "demystified" and the health care professions must make sure that information about the disease is made available in a form readily understood by the public at large.

In thanking Dr Duhr for his welcome and for his apposite and helpful opening statement, Dr Kaprio also expressed his warm appreciation of the help and support of the Government of the Grand Duchy of Luxembourg in arranging the present meeting. The Working Group meeting was one of a series of meetings arranged by the Regional Office for Europe on problems of cancer control. In the last few years the Regional Committee had agreed that more consideration should be given to cancer control activities within its general programme for the development of health services in the Region. He re-

ferred to the Conference on Comprehensive Cancer Control^a held in Copenhagen in 1977, and the Consultative Group on European Cancer Control Programmes which met in 1978 to advise the Regional Committee on what was required in this field. A cancer unit had been established in the Regional Office and funds earmarked in the Regional budget. Dr Kaprio saw the task of the Regional Office as the development of guidelines for countries in the design, implementation and evaluation of cancer control programmes. The need for such guidelines was demonstrated by the wide variation in the quality of services available to cancer patients throughout the Region, the inadequate exchange of information and experience, and insufficient use of managerial expertise in planning cancer control programmes. The relative contributions of the cancer centre and the community-based cancer programme to overall cancer control were ill-defined and there was a need for careful consideration and redefinition of the functions of these elements. The proliferation of special units often led to costly duplication of cancer control activities. Dr Kaprio invited the Working Group to begin the reconsideration of the structure of cancer control programmes which would be continued by further working groups over the next two years.

The detailed scope and purpose of the Working Group meeting were described by the Secretary. In addition to reviewing the present situation with regard to the development of cancer centres and community-based cancer control programmes, the Group would determine what the essential components of a cancer control programme were and what were the respective roles of the centre and the community-based programme in cancer control. They would also examine the relationship between the centre and the community-based programme, how far they could, or should, be integrated, and their links with general health services, social services and voluntary activities in the cancer field. The conclusions of the Working Group would form the basis for future work on the development of guidelines for the design of national cancer control plans which, it was hoped, would be undertaken in 1982.

CANCER CENTRES -- THE PRESENT SITUATION IN EUROPE^b

Introduction

Cancer centres of various types have been established in countries of the European Region from the early part of this century, though the majority

^a*Comprehensive cancer control*: report on a conference, Copenhagen, WHO Regional Office for Europe, 1978 (ICP/CAN 004).

^bBased on a regional survey conducted by Dr S. Harvei, Norway.

date from the last three or four decades. During that period there have been enormous advances in the possibilities for accurate diagnosis and for effective treatment of many cancers, through technological advances in diagnostic imaging, for example, developments in radiotherapy equipment and techniques and the emergence of chemotherapy. Many of these advances derive directly from work carried out in cancer centres and are in themselves evidence of the value of such institutions. Despite these undeniable advances, however, the overall incidence of, and mortality from, cancer continue to rise as does the cost of cancer care both in absolute terms and as a proportion of total health care costs. For many countries cancer centres are the main element in cancer control, and although they provide an excellent and effective service for cancer patients it must be recognized that they are very expensive to establish and run. At a time when scarcity of resources, both finance and skilled personnel, is a dominant theme in all health care planning, health authorities must ensure that the most effective use is made of them and that resources are not wasted by applying them to the wrong problems or by duplication of effort.

Because of their cost, and concern over their relationship to other aspects of cancer control, it is necessary to review the functions of cancer centres. The concept of cancer control has gradually changed from being mainly concerned with diagnosis and treatment to a much broader concern with other aspects of cancer management, including environmental factors in causation, primary prevention, public education, early detection, rehabilitation and after-care. We need to know what part the cancer centre currently plays in these aspects of cancer control and to consider whether and how its role might be strengthened.

This chapter describes the present situation with regard to cancer centres in Europe and, in particular, discusses areas of their activities which appear to the Working Group to be less than optimal and which may be capable of improvement. This critical emphasis should not be taken to imply that the Working Group does not recognize the very great contribution that cancer centres have made and continue to make to cancer patient care and, of course, to cancer research.

Previous statements relating to cancer centres

World Health Organization

A WHO Technical Report^a reviewed the organization of cancer treatment and recommended that special tumour clinics or cancer treatment centres should be established, taking into account local social and economic factors.

^aWHO Technical Report Series, No 322, 1966 (*Cancer treatment*).

The centres should serve a population of between one and two million and have 650 designated cancer beds. The centres could be either independent or linked to a large hospital and should provide facilities for diagnosis, treatment and follow-up of cancer patients, professional training in cancer care and research, and should cooperate with the cancer registry. A number of other Technical Reports^a dealt with the organization of radiotherapy services, emphasizing the necessity for centralization of the service. The report on the conference on comprehensive cancer control held in 1977,^b whilst making no specific recommendations about cancer centres, emphasized the need for better coordination of institutions concerned with cancer control. The consultative group on European cancer control programmes reported to the Regional Committee for Europe in 1978 that: "The role of cancer centres in a health service is not fully known, in areas such as their involvement in primary prevention, for instance. Their relations with other institutions and departments are frequently not defined and directives for their planning, building, organization and operation are often not worked out".

International Union Against Cancer (UICC)

The Committee on International Collaborative Activities (CICA) of the UICC has published a list of specialized cancer research and treatment establishments.^c It categorizes the treatment establishments into comprehensive cancer centres and cancer hospitals. The former are physically and/or organizationally autonomous, provide comprehensive patient care, clinical and basic research and professional training. They usually have a cancer registry, a social welfare service for cancer patients and a public education programme. The cancer hospital is a hospital, or a department or unit within a general hospital, which specializes in the comprehensive multidisciplinary management of cancer patients generally or of patients with cancers of a specific site or sites. Such a department would have a clinical director and engage in clinical research but would not have the other services provided by a comprehensive centre. The UICC list shows that in 1978 there were 237 establishments in Europe which came within one or other of these definitions.

^aWHO Technical Report Series, No. 306, 1965; No. 328, 1966; No. 492, 1972; No. 644, 1980.

^b*Comprehensive cancer control*: report on a conference. Copenhagen, WHO Regional Office for Europe, 1978 (ICP/CAN 004).

^cUICC Technical Report Series, No. 33, 1978. (*International directory of specialized cancer research and treatment establishments*).

Also in 1978 the UICC published guidelines for the establishment of comprehensive cancer centres.^a The guidelines envisaged three forms of comprehensive centre — as an independent establishment, as an integral part of a university, as an integral part of a medical school. The functions and general characteristics of a comprehensive centre were defined as follows.

1. A stated purpose that includes basic and clinical investigation, training and demonstration of advanced diagnostic and treatment methods.
2. A high-quality, interdisciplinary approach to diagnosis and treatment.
3. An environment of excellence in basic science, which assures high quality in basic research.
4. An organized detection programme.
5. A maintained statistical base for the evaluation of its results, the standardization of disease classification, and the exchange of information among institutions.
6. Leadership in developing community programmes, with participation by physicians practising within the centre's area.
7. A research base, fundamental and applied, which is coordinated with other facets of the centre's total programme.
8. Integration of its efforts with those of other centres in a nationwide, regional, or international system for the prevention, diagnosis, and treatment of cancer.
9. Beds sufficiently grouped to give the programme cohesion and identification, with favourable facilities for the programme to be carried out, including clinical investigation and interdisciplinary patient care.
10. An administrative structure that assures efficiency of operation and sound financial practices. The administration includes programme planning, monitoring and execution, as well as preparation of the budget and control of expenditure. Administration and management also includes staff appointments and space allocation, with the authority to establish the

^aCommittee for International Collaborative Activities. *Guidelines for developing a comprehensive cancer centre*. Geneva, UICC, 1978.

administrative and management procedures for carrying out its total responsibility and preserving its internal autonomy.

Forms of cancer centre in Europe

Health services have developed in a variety of ways in the different countries of Europe according to the influences of size, geography, population distribution, economic development, political system, culture and tradition. Cancer services show similar variety and the number and nature of the cancer centres within those services show striking differences between countries. In general, countries in eastern Europe have based their cancer services on a system of cancer centres organized separately from other health services and under the control of central government. Each major centre provides highly specialized facilities for cancer patients from a defined geographical area and linked to it are a number of smaller cancer hospitals (oncological dispensaries in the USSR), which provide diagnosis and initial treatment, referring patients on as necessary to the major centre.

This pattern of services is much less common in western Europe but a similar pattern has long been established in France where cancer services are based on independent cancer centres with an average catchment population of three million. More commonly services in western European countries are part of general health services and, while a small number of major cancer centres may exist, the majority of cancer patients are treated in general hospitals, often, but not necessarily, in special units within those hospitals. The increased recognition of the need to provide special facilities for cancer patients within general health care systems has, however, caused some countries to move towards some sort of specific organizational structure for cancer services and the concept of the coordinating cancer centre, which is a functional rather than a single physical entity, has recently emerged.

Cancer centres vary considerably in size. The largest has over 1000 oncology beds and a few other major centres have 400–500 beds. It is more usual however for the number of beds to be around 200. Coordination between cancer centres within a country varies considerably in scope and form. Both clinical and research activities may be coordinated through central government, there may be voluntary coordination on research activities or on administrative matters or there may be no coordination of activities at all.

Planning and financing of cancer centres

In many countries the planning of cancer services is not well developed and cancer centres have frequently been built on local initiative without reference to national or regional needs for cancer services. When built as part of a national plan for the development of cancer services, that plan is often itself divorced from general health service planning. On the other hand, in some

countries, full national plans have been drawn up within the framework of general health services and cancer centres developed logically within the plans. Where planning has been inadequate it may result in the cancer centre's role and relationships with the cancer services and general health services being so ill-defined as to lead to inefficient use of resources, duplication of effort and a less than optimal service for cancer patients. As the cost of cancer centres rises the need for integrated planning becomes more important and the scope for local initiative is reduced. Where private funds may have in the past contributed a large proportion or even the whole of the cost of a cancer centre this is unlikely to be possible in the future. Separate financing, outside the general provision for health care, is anyway probably undesirable, although it may sometimes be useful in stimulating developments where services are inadequate.

The cancer centre in relation to cancer control

Cancer centres are generally thought of as centres of excellence in the diagnosis and treatment of cancer patients and in oncological research and training, and their contribution to the wider aspects of cancer control is often poorly developed or absent.

Prevention

In eastern European countries the cancer centres play an important part in primary prevention, early detection and screening and cancer education. Cancer centres in other parts of Europe are not generally active in these fields except perhaps in research.

Diagnosis and treatment

Whilst cancer centres generally offer a high standard of care to cancer patients referred to them, inadequate integration of the centre with the general health services and lack of a defined regional responsibility for the centre may mean that patient referral is selective and that the service is not equally available to all who would benefit from it. Communication of advances in treatment from the centre to the health care professions outside is often inadequate and patients managed outside the centre may receive less than the best standard of care available. Even within centres communication between disciplines may be insufficient for a proper multidisciplinary approach to cancer care problems.

Rehabilitation and aftercare

Successful rehabilitation of the cancer patient depends on good communication between the centre, the referring hospital, primary care services and social services. This may be facilitated by the establishment within the centre of a department specifically concerned with rehabilitation, as has already been done in some centres. In general, however, contact between the centre and primary care services is poor and this may be detrimental to the long-term care of the cancer patient.

Training

Cancer centres play a major role in the training of doctors in cancer but training programmes are often poorly defined and links between centres and universities are often weak. Very few centres have coordinators of training and a multidisciplinary approach to training in oncology is not adopted. The training of nurses and other nonmedical health care professionals in the cancer centres is even less satisfactory. Little attention is paid to the training of any professional group in the wider aspects of cancer control.

Information

Accurate, readily accessible information on the incidence of cancer in its catchment population and on the clinical details of patients treated is essential to the proper functioning and evaluation of any cancer centre. Whilst virtually all centres record clinical information on their patients and use internationally recognized systems of classification for clinical and histopathological diagnosis, standardized procedures are often not used. As some countries do not undertake cancer registration, cancer centres in those countries are unable to study the epidemiology of cancer in their catchment populations or to properly evaluate the services they provide. Very few centres have computerized information services and information on socioeconomic factors, resource use and quality of life of cancer patients is seldom collected. Dissemination of information from the centre to the profession and public outside is generally poor, as also is exchange of information between centres.

Administrative and managerial aspects

Cancer centres are highly complex institutions in themselves and have, or should have, complex interrelationships with a variety of outside bodies. Ideally, the aims and objectives to be achieved by the centre should be defined in the light of the aims and objectives of the cancer control programme as a whole and the centre structured and managed in the way best suited to achieving the objectives. For many countries there are no clear policies or

plans for cancer control and the definition of objectives for the cancer centres is difficult or impossible. Without defined objectives the systematic planning of the activities of a cancer centre becomes very difficult and many of them show a rigidity of structure and inability to respond quickly to changes in demands as a result. Their complexity also calls for a high degree of administrative skill in management. There is a marked lack of people with the necessary skills, and an apparent reluctance in many countries to train administrators in modern managerial methods for application to health care problems.

Without clearly defined objectives and with the paucity of management information referred to above it is regrettably not possible to evaluate the role of the cancer centre in cancer control.

COMMUNITY-BASED CANCER PROGRAMMES IN EUROPE^a

Organization

Cancer control activities at the community level are usually integrated into the general health care system. Health care systems vary considerably among the different countries of the Region with primary care provided by private practitioners, by general practitioners remunerated by the state or by state-financed health centres, while the hospitals may be entirely privately owned and run, provided by charitable organizations, by health insurance companies or by the state. In some countries more than one system exists. The heterogeneity of health service provision implies a similar heterogeneity in cancer control activities with wide variation in the contributions from private, charitable and state sources and in the degree and mechanisms of coordination between them. No one system is obviously more effective or efficient than the others. Because of the close integration with general health care it is not possible to determine how much cancer control activities cost and how much manpower is involved.

Coordination of cancer control activities in some countries is the responsibility of the state health ministry and no coordination exists below that level. Some issues which have a bearing on cancer control, such as environmental pollution, are the responsibility of other ministries and may not be integrated into the cancer control programme. Voluntary organizations often play an important role in coordinating cancer control activities and may be more effective in covering the whole field than governmental bodies.

^aBased on a regional survey conducted by Dr M. Hakama, Finland.

Activities

Health education

Government and voluntary agencies are active in the cancer education of the public in most countries, though the intensity and direction of the effort varies considerably as does its effectiveness. Not all countries regard it as right to inform the patient of a diagnosis of cancer except where there are clear reasons to inform him.

Primary prevention

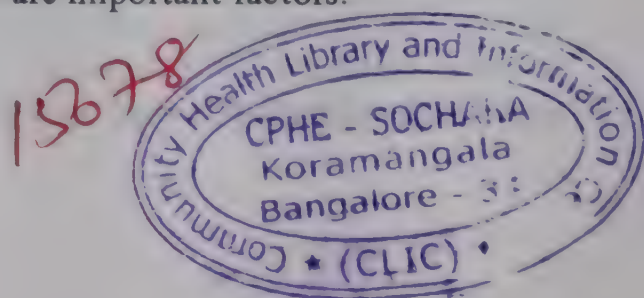
Legislation on protection against carcinogenic hazards in the environment exists in all countries but it is not always regarded as an essential part of cancer control and therefore not always integrated with other cancer control measures. Specific activities in primary prevention are mostly aimed at smoking and alcohol through legislation, which is usually enabling rather than specific, and public education.

Screening and early diagnosis

All countries conduct some cancer screening but the extent is very variable. Cervical cytology is the commonest screening procedure but varies in frequency from annual to occasional. Screening for breast cancer by education in breast self-examination or by clinical examination and mammography is practised to some extent in most countries, and some countries have programmes for screening for prostate, bladder, lung, colon and skin cancers. There is considerable difference of opinion on the usefulness of cancer screening activities and some anxiety about the resources required for large-scale screening in relation to the likely effect on cancer morbidity and mortality. The application of screening is at present limited to only a small number of cancer sites and for the majority of cancer patients reduction of delay through public and professional education is seen as of greater importance. The efficiency of screening is greater when it is organized as a specific programme rather than as part of general clinical practice.

Treatment

Treatment facilities for cancer patients are much better organized than other aspects of cancer control. The development of cancer centres and of the multidisciplinary approach to cancer care are important factors.



Rehabilitation and aftercare

Rehabilitation of the cancer patient is handled well by some cancer centres with good follow-up arrangements and good contact between the centre, the local hospital and the general practitioner. In some centres rehabilitation teams have been established. In many instances, however, the social and psychological aspects of rehabilitation are neglected or are not integrated with physical rehabilitation. Voluntary organizations can play a very valuable role in this respect. The patient's own contribution to follow-up is also important and depends on adequate education about the nature of his disease.

Planning and evaluation

Planning an effective community-based programme requires information on population trends, projections of cancer incidence by site, sex and age, exposure to carcinogens in the environment, resource use and projections of future resource needs. Integrated cancer information systems providing all the data required do not exist in any country in Europe and there is often failure to use such information as is available. Planning is more often based on a consensus of expert opinion and the amount of money available than objective analysis of current and future needs. The most important single information source in planning is the population-based cancer registry providing data on cancer incidence over time, from which projections of future incidence patterns can be made. Although there are dangers in such projections they can be extremely useful in estimating future needs.

The information and techniques do not exist which would allow overall evaluation of community-based programmes, but it should be possible to evaluate certain elements within them. Treatment is generally adequately evaluated through clinical trials but other elements in the programme are evaluated less well or not at all. Changes in incidence and mortality are the basic measures for evaluation of preventive activities, and a population-based cancer registry is essential for these to be made. Evaluation of primary prevention and screening programmes is of great importance but is in general very poorly done. Patterns of delivery of care may be evaluated through survival data, but the complexity of the determinants of survival rates make interpretation of comparative survival data very difficult and there is no good evidence that one pattern is any better than another.

AIMS AND OBJECTIVES OF A CANCER CONTROL PROGRAMME

The contribution of the cancer centre and the community-based programme to cancer control and how they may best be organized to make their

contributions can only be realistically considered within the framework of the aims and objectives of the cancer control programme as a whole.

Aims of a cancer control programme

The Working Group identified three main aims in cancer control:

- (a) reduction of mortality from the disease;
- (b) improvement of the quality of survival for patients with cancer; and
- (c) improvement of the effectiveness of prevention.

Within those aims a number of more specific objectives can be defined.

Definition of objectives

The Working Group defined the objectives of a cancer control programme as follows:

- (a) to secure for all patients with cancer an equal and high standard of care, encouraging the use of agreed medical protocols for patient management and determining the most appropriate disposition of treatment facilities to meet the best interest of the patients;
- (b) to assess the state of cancer services and the demands made upon them in order to identify areas that need strengthening;
- (c) to promote public education in all aspects of cancer, particularly to increase understanding of the advantages of early treatment;
- (d) to promote further education of all doctors and other health professionals in all aspects of cancer care, particularly on the need for early diagnosis;
- (e) to implement measures for primary prevention;
- (f) to improve early detection and to implement screening programmes which are of demonstrated effectiveness;
- (g) to promote the compilation, distribution and understanding of cancer statistics and to encourage their use in the improvement of cancer services;

- (h) to foster cooperation with local authorities in order to provide the best possible aftercare for cancer patients;
- (i) to promote the development of rehabilitation services for cancer patients;
- (j) to assist in the development of humane terminal care; and
- (k) to promote research into all aspects of cancer and to evaluate the effectiveness of the cancer control programme.

In the following paragraphs of this chapter, these objectives are discussed in terms of what they involve, what is required to achieve them and where the main responsibility for their achievement lies.

Equal and high standard of care

A cancer patient's requirements for care depend on a number of factors such as age, type of cancer, stage of disease, general physical and psychological state, and family circumstances. "Equality of care" does not mean literally that each patient should receive the same care but that each should have equal opportunity of receiving the care most appropriate to his individual circumstances, care that will give him the highest chance of cure or the longest period of good quality survival. He must therefore have ready access to doctors and other health care professionals skilled in the management of his cancer by the latest proven methods of diagnosis and treatment. This implies ready awareness of the possibility of cancer on the part of the patient and his general practitioner, an efficient referral system and a cancer service organization capable of meeting the needs of each patient in its catchment population.

It is acknowledged earlier in this report that the cancer centre is likely to offer the highest standard of care available and to be in the forefront of development of new and better methods of treatment. In many countries however cancer centres have the capacity to treat only a minority of the cancer cases occurring, and even where most patients can be treated in a cancer centre it may not always be appropriate to the individual patient, because of family circumstances for instance, for him to be treated in a centre a long way from his home. Patients treated outside cancer centres should nonetheless receive treatment as near as possible equal in quality to that available in a centre, and this requires that the best practices developed in the cancer centres should be understood and applied by the staff of peripheral hospitals. There are a number of possible ways of achieving this through the cancer centre or through the community-based programme which will be discussed later, but the use of standard medical care protocols for specific cancers and

the organization of site-oriented clinical groups on a regional basis may be mentioned here as two important circumstances.

The development of a high level of medical and nursing skills in the management of specific types of cancer depends on familiarity with the disease. There is now convincing evidence that the results of treatment of the less common cancers, such as childhood tumours or the leukaemias, are significantly better if the patients are treated in a unit specializing in their care where high patient throughput can be achieved. Even for the commoner tumours there is a minimum level of patient throughput below which treatment skills may not be optimal, even though standard protocols are used. In planning the distribution of treatment facilities a balance has to be struck between the need for some degree of concentration of facilities – important for the rarer cancers, less so for the common ones – and the need for these facilities to be not too remote from the patient's home.

Assessment of services and demand

Planning of cancer services, or for that matter any other aspect of health care provision, must be based on knowledge of the demand for services arising from the population served. Through the population-based cancer registry it should be easier to measure demand for cancer services than for many other types of health care but, as already indicated, such measures, based on projections of the numbers and types of cancers arising in the population, are frequently not available or not used.

There is little opportunity these days for planning services from scratch. It is necessary therefore to analyse the services currently available and to assess, in the light of information on demand, whether the service is adequate and appropriately structured, where there are deficiencies and weaknesses and where improvements might be made. Again, as we have seen, the information available from routinely collected health statistics is frequently inadequate for this task and specific research is required. Both the cancer centre and the community-based programme should probably be involved in this research.

Public education

The Working Group regarded public education in cancer as a major factor in cancer control. There is still much ignorance about the nature of cancer, false beliefs and superstitions about the disease remain current, and many people have an understandable but increasingly unjustified fear of the disease which may lead to delay in seeking care. At the same time there has been a notable failure of the public consciousness to recognize the links between personal habits ('lifestyle') and the risks of developing cancer. A public education programme covering particularly these issues, and with the emphasis on the need for and advantages of early treatment of the disease,

forms an essential part of the community-based cancer programme. It may be coordinated on a national or regional basis or, as in eastern European countries, by the cancer centre. Research into its effectiveness is also needed and this can be a function either of the community-based programme or the centre.

Professional education

The training of doctors and other health care professionals in oncology is a major topic of discussion at the present time. Undergraduate and postgraduate training in oncology have been the subjects of recent WHO European Region working group meetings^{ab} and the present working group did not therefore consider them in any depth. It is apparent however that the cancer centre must play a major role in oncology training in association with the universities and professional bodies and that this should be one of its main functions.

The training programme should include not only the formal training of professionals who will spend all or the greater part of their time in the management of cancer patients, but also the training and education of general practitioners, physicians, surgeons and other specialists who manage cancer patients as part of their day-to-day work. For this latter group there should be particular emphasis on the need for early diagnosis and on advances in treatment.

There are various ways in which the cancer centre may achieve this objective and these are discussed in the next chapter. The community-based programme also has a role in professional education which it can undertake in association with the centre or independently.

Primary prevention

Primary prevention is a complex area of cancer control because of the number of different agencies involved. The responsibility for environmental protection and protection against hazards in the workplace lies within the health ministry in only a minority of European countries. More often separate ministries are involved and these activities are not seen as part of cancer control as such. In the majority of countries it is therefore difficult for the cancer centre or the community-based programme to play a significant part on a national level in the implementation of preventive measures against en-

^a*Postgraduate training in clinical oncology*: report on a Working Group. Copenhagen, WHO Regional Office for Europe, 1981 (document ICP/CAN 011).

^b*Undergraduate education in cancer in the European Region*: report on a UICC/WHO Meeting. Copenhagen, WHO Regional Office for Europe, 1981 (EURO Reports and Studies, No. 49).

vironmental or industrial carcinogens. The cancer centre can, however, contribute to the identification and characterization of carcinogenic substances and the community-based programme can ensure that there is proper coordination of preventive measures on a regional basis.

Primary prevention related to the individual's own environment is largely a matter for health education and is discussed above.

Early detection and screening

The improvement of early detection, the diagnosis of more cancers at an earlier stage of development, depends very much on increasing the awareness of the public and the medical profession at large of the early symptoms and signs of cancer and of the advantages of early treatment. As such, the main thrust of effort must be on public and professional education and must be mainly the responsibility of the community-based programme.

In only a few types of cancers is systematic screening feasible or worthwhile. Where it is appropriate to mount screening programmes, either of the whole population or of defined groups, it is generally the responsibility of the community-based programme to do so, though in eastern European countries this is a function of the cancer centre. In either situation the cancer centre has an important role to play in the development of new techniques for early detection and in the evaluation of the effectiveness of early detection and screening programmes.

Cancer statistics

Neither the cancer centre nor the community-based programme can function effectively without a good data base. In the centre the hospital-based cancer registry assists in cancer control by ensuring that patient records are complete and accessible, by initiating follow-up appointments and by assisting in the data management required for clinical trials. It can also provide much valuable administrative information about the functioning and costs of the centre.

The population-based cancer registry provides information of the amount of cancer occurring in the population by age, sex and site. Year-on-year comparisons enable trends in incidence to be discerned which may provide evidence of the effectiveness of control measures and enable forecasts of incidence and of resource needs to be made. Follow-up of registered cases to death provides information on population-based survival rates. The population-based cancer registry should work in close cooperation with the hospital-based registries in its area.

A population-based registry should be an integral part of any community-based cancer programme and receive sufficient support, both financial and clinical, to allow it to function efficiently. The quality of the data it receives

is likely to be higher if clinicians responsible for registering patients are fully aware of the need for registration and the uses to which the information can be put.

Cooperation with local authorities

Continuity of care is of special importance in cancer patients and they are often more dependent on aftercare services than other types of patient. Patients discharged from hospital on chemotherapy or with stomas, for instance, require a considerable amount of support, both for themselves and for their families, from the community-based programme and social services. The community-based programme must make sure that these services are available and properly coordinated and that sufficient information about the patient is available from the cancer centre or other hospital to enable the appropriate aftercare to be given. Voluntary, charitable and private services will also be involved in some instances and liaison must similarly be established with them.

Rehabilitation services

Cancer patients often have special problems in physical and psychological rehabilitation after treatment and need skilled help in readapting to their family, social and work environments. Effective rehabilitation needs to start early and therefore necessarily involves the cancer centre or other hospital where the patient is treated, but much of the responsibility will fall on the community-based programme and there must be good communication between them. Assessment of the need, for example, for reconstructive surgery, after the initial treatment is completed, is a matter for cooperation between the community-based programme and the centre.

Terminal care

The requirements for terminal care are in many respects similar to those for rehabilitation. The main burden for the provision of terminal care will fall on the community-based programme, but the cancer centre can assist with the development of efficient pain relief measures and may be able to provide further support through short-term admission of terminal patients and palliative surgical procedures. Close cooperation between the centre and the community-based programme is essential. In some countries the development of the hospice concept has made a considerable contribution to the effective management of the terminal cancer patient.

Research

Basic, clinical, epidemiological and evaluative research programmes are essential components of any cancer control programme. An extensive programme of basic laboratory research is likely only to be carried out in the larger cancer center, but there should probably be some facilities for such research in all cancer centres as a necessary support to a clinical research programme. The cancer centre will be the natural focus for clinical research and, as far as possible, the majority of patients treated at the centre should be treated within the framework of clinical trials protocols. Some aspects of the clinical research programme will also require links between the cancer centre and peripheral hospitals and with the community-based programme.

Epidemiological research may be based on the cancer centre but is probably more a function of the community-based programme. Evaluative research on the effectiveness of cancer services will need to be carried out both by the cancer centre and the community-based programme, and should take account of the links between them.

THE CANCER CENTRE IN CANCER CONTROL

In this chapter the role of the cancer centre in cancer control is considered, and the organizational structure required to enable it to fulfil that role is discussed. The Working Group regarded the cancer centre as a centre of excellence in cancer care, providing leadership in the development of services for patients with cancer and making a major contribution to national policies for cancer control. It was recognized that the role of the cancer centre would vary from country to country depending on the prevailing pattern of services and on the general structure of health care provision. No single prescription applicable to all countries was possible and the Working Group accepted that its recommendations would need to be adapted to national circumstances.

The Working Group indentified two main forms of cancer centre. The *comprehensive cancer centre* providing all aspects of cancer care, together with training and research facilities, in one institution in a single geographical location. Such centres are very costly to establish and it may not be possible for some countries to provide more than one or two. The same functions can, however, be discharged by a *coordinating cancer centre*, or *functional comprehensive cancer centre*, which coordinates the activities of a number of separate institutions within a defined geographical area. In the following paragraphs the term "cancer centre" should be understood to cover both the comprehensive and the functional comprehensive centre.

The Working Group considered the main functions of the cancer centre to be as follows:

- (a) to develop and provide cancer control measures at the highest possible level to the largest possible proportion of the population;
- (b) to provide training for medical and other health care professionals in cancer care;
- (c) to conduct basic, clinical and epidemiological research into cancer and to disseminate the results;
- (d) to evaluate treatment regimens and screening programmes; and
- (e) to define and implement measures for primary prevention in association with other relevant organizations.

Development and provision of cancer control measures

As a centre of excellence the cancer centre plays a key role in the planning, organization and development of the cancer control programme. It should form the spearhead of the oncology service, setting and maintaining the highest possible standards of multidisciplinary cancer care. The proportion of the population able to be treated at the centre will vary according to the number of centres. In some countries the majority of cancer patients will be seen at the centre at some stage of their disease even if their whole treatment is not carried out there. In others the majority of patients will be treated in peripheral hospitals and only the more difficult cases, or patients with rare tumours, will be referred to the centre. The basis on which patients are selected for cancer centre management will vary among countries according to the general framework of health care provision and the existing pattern of the oncology services. The cancer centre itself must ensure that the criteria for patient referral are widely known and understood and that referral mechanisms are such that there is no undue delay in the provision of treatment.

The cancer centre should be responsible for the development of optimum treatment, follow-up and aftercare regimens for use within and outside the centres. It should be a source of advice on treatment to oncologists working outside the centre so that, as far as possible, all patients with cancer receive the best available treatment. Mechanisms which may be used for the dissemination of this advice include publications in professional journals, limited circulation publications such as newsletters, the organization of seminars and conferences, and short-term attachments to the centre of doctors and other health professionals.

Training

The cancer centre plays a vital role in the training of doctors and other health care professionals in the discipline of oncology. In many countries medical education pays too little attention to oncology. Oncology is a subspecialty of almost all the major specialties and, if the problems it presents are to be effectively dealt with, doctors require some degree of special training. In some countries, particularly in eastern Europe, cancer centres have been established within, or with close links to, a university and can play a part in undergraduate as well as postgraduate education. The Working Group was in agreement with an earlier working group^a that close links between the cancer centre and the university were essential for the development of effective training programmes in oncology. The cancer centre provides the essential practical instruction in prevention, diagnosis and treatment of cancer to complement the theoretical instruction provided by the university, and it must be organized and staffed to enable it to meet its teaching commitments.

The cancer centre should, therefore, wherever possible, contribute to undergraduate medical education, provide facilities in conjunction with the university for postgraduate training in the oncological aspects of the major medical specialties, and full training facilities for doctors intending to specialize in oncology. In addition it should organize seminars and short training courses for doctors who need to be brought up to date in diagnostic and therapeutic techniques in oncology, and for nurses and other health care professionals who are involved in cancer care.

Research and evaluation

As suggested before, the cancer centre will be the main focus of basic and clinical research in oncology. There are advantages to both in the approximation of basic and clinical research within a centre and, although not all cancer centres will have major basic research institutes associated with them, some facilities for laboratory research should be available. Collaborative projects between basic and clinical research workers are often of great value in increasing understanding of the disease and in developing or refining treatment methods and should be encouraged.

The clinical research programme should cover all aspects of cancer management from diagnosis to rehabilitation but the main thrust is likely to be concerned with treatment regimens. Clinical trials to establish the value of

^a*Postgraduate training in clinical oncology: report on a Working Group.* Copenhagen, WHO Regional Office for Europe, 1981 (document ICP/CAN 011).

methods of patient management are of great importance in the cancer field and the cancer centre can be expected to make a major contribution in this area. As the case mix of patients admitted to the centre may not be representative, the more difficult cases being admitted preferentially, the clinical trial programme at the centre may need to include collaborative studies with associated hospitals. The expert evaluation of treatments by clinical trials and the dissemination of the results is one of the most important functions of the cancer centre.

Some cancer centres will also conduct epidemiological research on their own catchment populations or on a wider basis in collaboration with the community-based programme or with other centres.

The cancer centre should also have the expertise to evaluate not only its own activities but also some aspects of the community-based programme, particularly in early detection, screening and cancer education, whether or not the centre is actively involved in the provision of these services. Evaluation of the cancer centre as a whole is probably not possible.

Primary prevention

Research into mechanisms of carcinogenesis and the identification of carcinogenic substances will form part of the cancer centre's basic research activity. In association with other relevant organizations, such as environmental health and health and safety-at-work agencies, it should be concerned with the framing of preventive measures and encourage their implementation in association with the community-based programme.

Finance

Cancer centres are necessarily large, complex organizations which are very costly to establish and run. Methods of funding cancer centres vary between countries from full state financing as an integral part of the state health care system to entirely private financing, while many centres are financed jointly by several different state and private sources, the latter both national and international. The Working Group recognized that in the present financial circumstances it was very difficult for most countries to establish new comprehensive cancer centres within the funds available for health and social services. The coordinating or functional comprehensive centre requires less capital investment and the cost of establishing this type of centre may be containable within the health budget.

Once established, the centre, of whatever type, requires a high level of funding to discharge all its functions and ideally this should be through specific and direct financing. In many countries however the system of health care financing would not allow this to be done, and funds for the centre would come, directly or indirectly, principally from the general health services bud-

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get. In these countries cancer centres would be in competition for funds with other health care activities. The Working Group attached great importance to the methods of funding of the cancer centre and considered that, wherever possible, funding should be direct, and in countries where the state was mainly responsible the cancer centre should be given special status in the health services budget. A centre that is state financed should be able to raise funds from other sources, either for general use or to support specific activities. In those countries where health care is largely financed from private sources there is likely to be less difficulty in funding the cancer centres as there are usually more private funds available for cancer than for other diseases.

Organizational considerations

In order to operate effectively the cancer centre needs to have clearly defined organizational links with a number of other bodies and health care activities. A possible pattern of organizational links is indicated in Annex 1.

The university

Close links with the university are essential if the cancer centre is to fulfil its role in undergraduate and postgraduate training. There should be a number of recognized teaching posts in the centre and the centre should be staffed to a level sufficient to meet teaching commitments. Links with the university are also necessary for the centre's programme of basic and clinical research and the university can play a valuable role in the evaluation of the centre's activities. Where the cancer centre is within a university, the establishment of links is easier than when the center is geographically remote from a university.

The health authority

The cancer centre is part of the health care system and whether the centre is state-financed or privately funded it must have links with the responsible health authority, either regional or national. These links will necessarily be closer when the centre is financed through the health authority.

Peripheral hospitals

The cancer centre cannot be responsible for the whole management of all the patients with cancer in its catchment population. Many patients will first be seen in a general hospital and will receive at least some of their treatment there. There must be clearly defined referral channels between the general hospitals and the cancer centre and the expertise available at the centre must be accessible to all. Joint appointments of staff to the cancer centre

and the general hospital are useful in forming this link; alternatively cancer centre staff could hold consulting clinics at the general hospital.

Primary care

There will be some referrals of patients directly to the cancer centre from the general practitioner and referral mechanisms must be available. Many patients treated at the centre will be referred back directly to the general practitioner on completion of treatment. Effective links between the centre and the general practitioner and other primary health care personnel are essential for the optimum aftercare and rehabilitation of the cancer patient. The cancer centre should recognize the needs of the general practitioner and community nurse in its training programme.

Community-based programme

The links between the centre and the general hospital and primary care team are an element in the centre's links with the community-based programme. It is also important that there should be a strong administrative link between the centre and the body responsible for the organization of the community-based programme. The centre and the community-based programme are equally important in cancer control and should be mutually supportive and closely integrated both at the policy and practical levels.

Internal structure of the centre

The Working Group did not discuss in any detail the requirements for the internal structure of a cancer centre. The elements to be included are discussed above and the interrelationships of these elements within the centre will vary between centres according to national and regional needs and customs. With regard to cancer care, however, the Working Group stressed the importance of the multidisciplinary approach. The cancer centre should be so organized that multidisciplinary care is available to all patients. The administration of the cancer centre should be in the hands of professional personnel trained in administration, or lay administrators skilled in the management of complex health care establishments. Appropriate training programmes in administration should be available.

THE COMMUNITY-BASED PROGRAMME

Most cases of cancer are diagnosed and patients receive their initial treatment outside the cancer centre. If these patients are to receive the best care for their disease some kind of organizational structure is required to coordinate

the various activities relevant to cancer care in the community. This is the community-based cancer programme. It is a vital adjunct to the cancer centre and in countries, or regions of countries, where no cancer centres exist, it is the main means of delivery of cancer care to the population. It is also the means whereby cancer education can be promulgated, and prevention and early diagnosis measures can be implemented.

The main functions of the community-based programme can be stated as follows:

- (a) to promote primary prevention and early diagnosis through public and professional education;
- (b) to provide facilities for early diagnosis and for screening programmes, where scientifically justified;
- (c) to provide diagnostic, treatment, aftercare, rehabilitation and terminal care facilities at the highest attainable level; and
- (d) to conduct research into needs for cancer care, and plan and evaluate the services provided.

The major elements of the community-based programme are summarized in Annex 2.

Public and professional education

In most countries public education in cancer is regarded as primarily a function of the community-based programme, though in eastern European countries the cancer centre takes the lead. The aim in public education must be to increase the lay public's understanding of the nature of cancer, their awareness of known causative factors, the importance of early diagnosis and the possibilities for successful treatment. The community-based programme should develop educational material relevant to these aims for promulgation to the general public through schools, further education establishments, factories and other workplaces, social organizations and through the communications media to the public at large. In some countries there is an established health education programme and health education officers are employed by health authorities to promote it. The cancer education programme may be part of the general health education programme or, because of its special features, may be better organized separately. The community-based programme (or the cancer centre in some countries) should appoint education officers to develop and implement a coordinated programme of

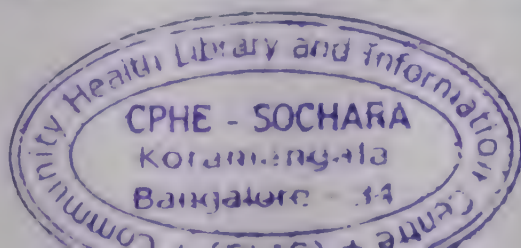
public education, assisted as necessary by members of the health care professions concerned with cancer care.

Professional education in oncology is primarily the responsibility of the cancer centre, but the community-based programme can play a part here and where there is no cancer centre the responsibility will fall on the community-based programme. Whilst formal training of doctors aiming to specialize in oncology is probably best carried out in a cancer centre, the introduction of the undergraduate to oncology and the familiarization with oncological problems of doctors in other specialties or in primary care can be successfully carried out as part of the community-based programme. The organization of seminars and conferences and publication of newsletters can be helpful in disseminating information to health care professionals on clinical and other aspects of oncology. The disease-oriented group can be very effective in introducing optimum management protocols to clinicians who are treating patients with cancer but who are not themselves oncologists. The education of the general practitioner and other members of the primary care team in early diagnosis of cancer and in aftercare and rehabilitation of patients treated for cancer is an important element in the raising of standards of care for cancer patients. The community-based programme must play a major part in this, even where there is a cancer centre active in this field.

Early diagnosis and screening

Whilst methods of early diagnosis and screening may be developed by the cancer center and perhaps also evaluated by it, the provision of such services is a function of the community-based programme in most countries. As mentioned above, education, both public and professional, is important in this context. The provision of early diagnostic services is of little use if public and profession are not convinced of the value of early diagnosis in terms of survival and quality of life. Early diagnosis facilities may be provided by a number of different agencies including the health authority, local government agencies, the general practitioner, and voluntary, charitable and private organizations. Wherever possible the community-based programme should coordinate the activities of these various bodies in early diagnosis, and establish agreed criteria for the procedures used and their application to the population at large or to specific population groups. It should ensure that clearly defined referral channels exist between the early diagnosis clinics and hospitals or the cancer centre for the prompt confirmation of the diagnosis and provision of treatment.

Large-scale screening programmes for asymptomatic people are probably of value in only a very few types of cancers such as cervical, breast and possibly colon. Such services are best organized by the community-based programme as a specific activity separate from its general cancer care activities, though links with diagnostic and treatment facilities are clearly necessary for the



subsequent management of suspected cancer cases picked up through the screening programme.

Cancer care facilities

Facilities for the diagnosis, treatment, aftercare, rehabilitation and terminal care of cancer patients will be provided by the primary care and hospital elements of the general health services, by the cancer centre and by private sector health services. It is the function of the community-based programme to coordinate the contribution of each of these elements, to match the facilities provided to the needs of the population served, and to ensure that standards of care are maintained at the highest possible level. The discharge of these functions requires that the authorities responsible for the provision of services recognize and give sufficient priority to cancer care activities. There should be a mechanism for ensuring that the health authority is fully informed about needs for cancer services in the community at primary care and hospital level and receives the best advice on the measures necessary to meet those needs. Maintenance of adequate staffing levels is one of the most important aspects. Sufficient fully-trained staff in all disciplines relevant to cancer care are essential to the achievement of a high standard of care at all stages of the cancer patient's management. The balance of staffing levels at the different stages of management should be kept under review to ensure that, as far as possible, no serious deficiencies develop.

The distribution of specialized services should be matched as far as possible with the population distribution so that no part of the community is remote from expert care. Patients with rare cancers are probably best treated in centres specializing in their care, and appropriate lines of referral must be established to facilitate access to the special centre. The multidisciplinary concept of cancer care, developed in the cancer centre, should be promulgated through the community-based programme and all hospitals providing cancer care should be encouraged to adopt it. It is applicable to some extent also at the primary care level and the involvement of nonmedical disciplines such as social work can greatly improve the quality of aftercare for the cancer patient.

Planning and evaluation

As indicated above, the community-based programme has a vital role to play in the planning of cancer services for a regional population. The nature, capacity and distribution of services must be planned to meet the needs of the population and this requires that the needs be identified and defined as accurately as possible. The population-based cancer registry is the most important source of information on the size of the problem, providing data on the number of cases of cancer occurring in the population, their age and sex

distribution, and an indication of likely trends in incidence over time. The information available from the cancer registry may need to be supplemented by research to obtain a more detailed picture of, for example, the geographical distribution of a particular cancer or the incidence of a particular histological sub-type which may require specific management arrangements. The community-based programme should have the capability for undertaking such investigative epidemiological research independently or, where there is a cancer centre in the region, in association with the centre.

Information on the existing pattern of services and on the use made of these services is also essential for effective planning. Information on diagnostic facilities, on beds and bed usage, surgery and radiotherapy facilities and patient throughput, patient referral patterns, aftercare, rehabilitation and terminal care facilities may be collected routinely or may require specific enquiries. The development of an integrated information system to cover these various activities is an ideal to aspire to, but this seems unlikely to be achieved on any scale in the foreseeable future.

As the services for cancer patients are provided through a number of different agencies there must be effective channels of communication between the community-based programme and the various agencies to ensure that the planning of services for cancer patients is properly coordinated, and that duplications or lacunae are avoided. The organizational requirements for this are discussed below.

There should be a continuing programme of evaluation of the services provided as a necessary adjunct to planning. Evaluative research on specific activities may be conducted by the community-based programme itself, or by the cancer centre or university, or by collaboration between them. The complexity of the community-based programme probably precludes the overall evaluation of these activities, as it does evaluation of the cancer centre, but trends in overall survival of cancer patients in the population served offer a crude measure of the effectiveness of the programme.

Organization of the community-based programme

The community-based programme draws together the activities of a number of different organizations and agencies and facilitates the achievement of a common aim – the provision of good quality cancer prevention and cancer care to the community. The organizational structure that needs to be developed for this purpose will vary according to the existing structure of health care provision in which there are considerable national and, to a lesser extent, regional differences. The Working Group considered a number of possible structures and those illustrated in Annexes 3 and 4 are intended only as examples which might be adapted to local needs. The most important elements in the structure are discussed briefly below.

The executive team

To implement the activities which are needed to fulfil the functions of the community-based programme, some form of executive is required. It cannot be left to the health authority, with its diverse responsibilities, to ensure that the aims which have been identified for the community-based programme are actually realized. The community-based programme must achieve its aims through the cooperation of many individual workers in different services rather than by its own direct action. It therefore needs only a small executive team to initiate the cooperative action of others. One or two experienced professionals, supported by a secretariat, may well be sufficient.

The advisory committee on cancer services

The executive team will need to be supported and advised by an expert committee whose function would be to define a policy for the development of the community-based programme. It would review activities across the whole field of cancer control in the region in the light of epidemiological and health service utilization data, advise the funding authorities on the requirements for cancer services in the region, suggest research requirements and, through the executive team, ensure that measures for the coordination and improvement of services were carried out. The advisory committee would comprise representatives of the primary care, general hospital and private sectors of the health service, the cancer centre where one exists, the university, and relevant voluntary and lay organizations. Subcommittees may be set up to consider particular aspects of cancer services.

The health authority

For many countries in the Region the local health authority is responsible for the provision of all or most of the health services, including services for cancer patients. The health authority must, therefore, be closely associated with the community-based programme through direct administrative links between the authority and the executive of the programme. It is likely that in many instances the executive will be financed by the health authority.

The university

Links with a university, either directly or through some form of liaison committee, possibly between the health authority and the university, are desirable. The community-based programme's research activities will be enhanced by such a link and may enable it to share in or assume some of the educational functions of the cancer centre.

Voluntary organizations

Voluntary organizations are frequently active in prevention, education and early detection, and in the provision of aftercare and terminal care facilities. Their activities should, wherever possible, be integrated with services provided as part of the general health services, and links are therefore needed between the voluntary organizations and the community-based programme, either directly or through the health authority.

The general health services

In addition to the link through the health authority, direct links with the primary care sector, the general hospitals and the private health sector are required. This link can effectively be made through the advisory committee on cancer services, which has representatives of the health care professions from all parts of the region served. Working links would also need to be established between the executive team and individual hospitals and general practitioners.

Non-health agencies

If the community-based programme is to pursue primary preventive activities it will need both advisory and working links with central or local government agencies responsible for environmental protection and health and safety at work.

Information and research

The population-based cancer registry must be readily accessible to and have a close working relationship with the executive team. It should supply regular analysis of cancer incidence in the catchment population and undertake special projects at the request of the executive team. Linked to it, but preferably based in the university, there should be a cancer epidemiology research facility. Health service utilization data should be available through the health authority. Any available facilities for clinical, health services or social research on cancer should be linked in to the community-based programme through the executive team.

The cancer centre

The presence in the region of a cancer centre will have a major effect on the structure of the community-based programme. The cancer centre would play a major role in the advisory committee and would be linked in, directly

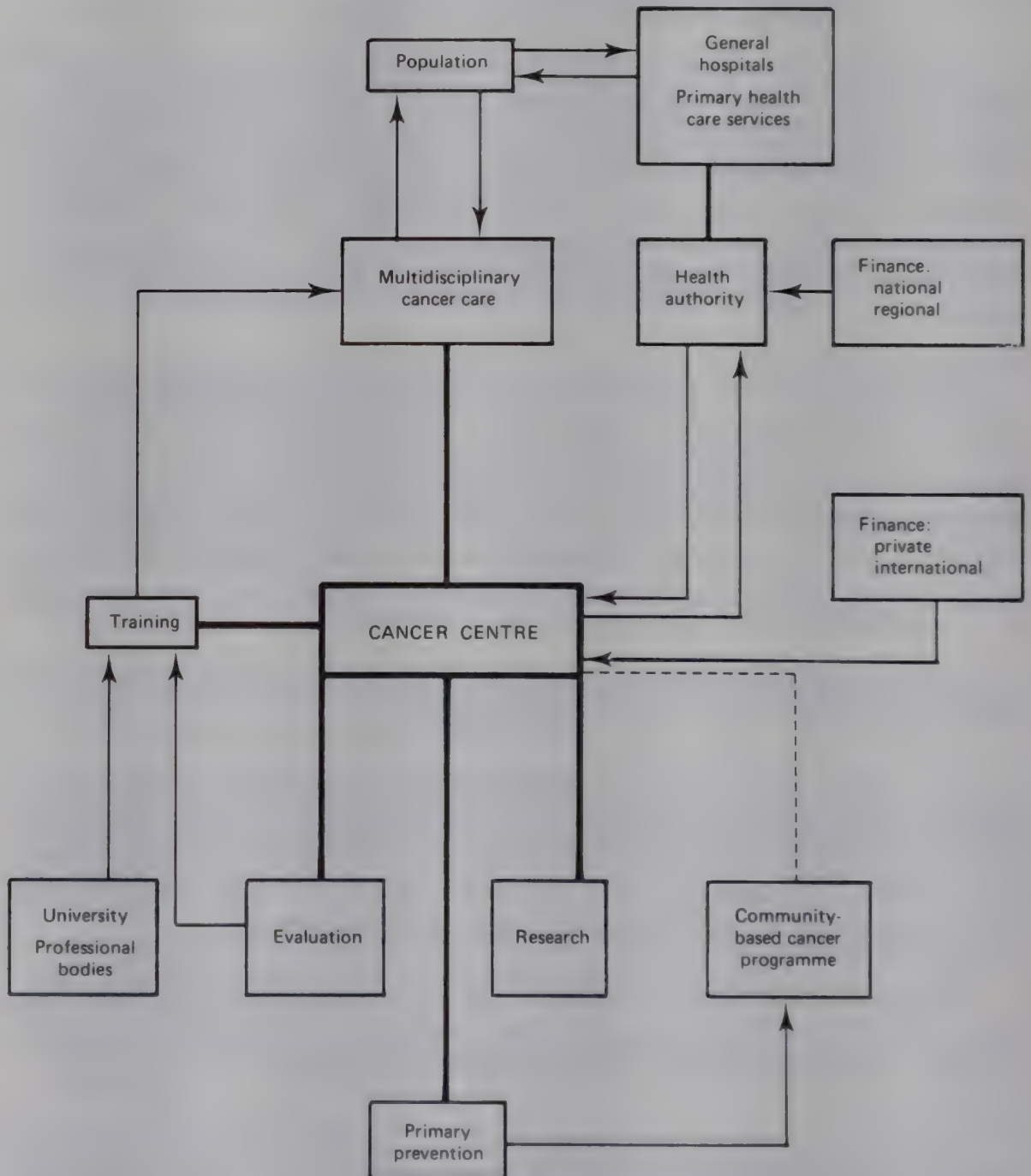
or indirectly, to many of the activities in the programme. In Annex 4, to avoid confusion, only the link with the advisory committee is shown.

RECOMMENDATIONS

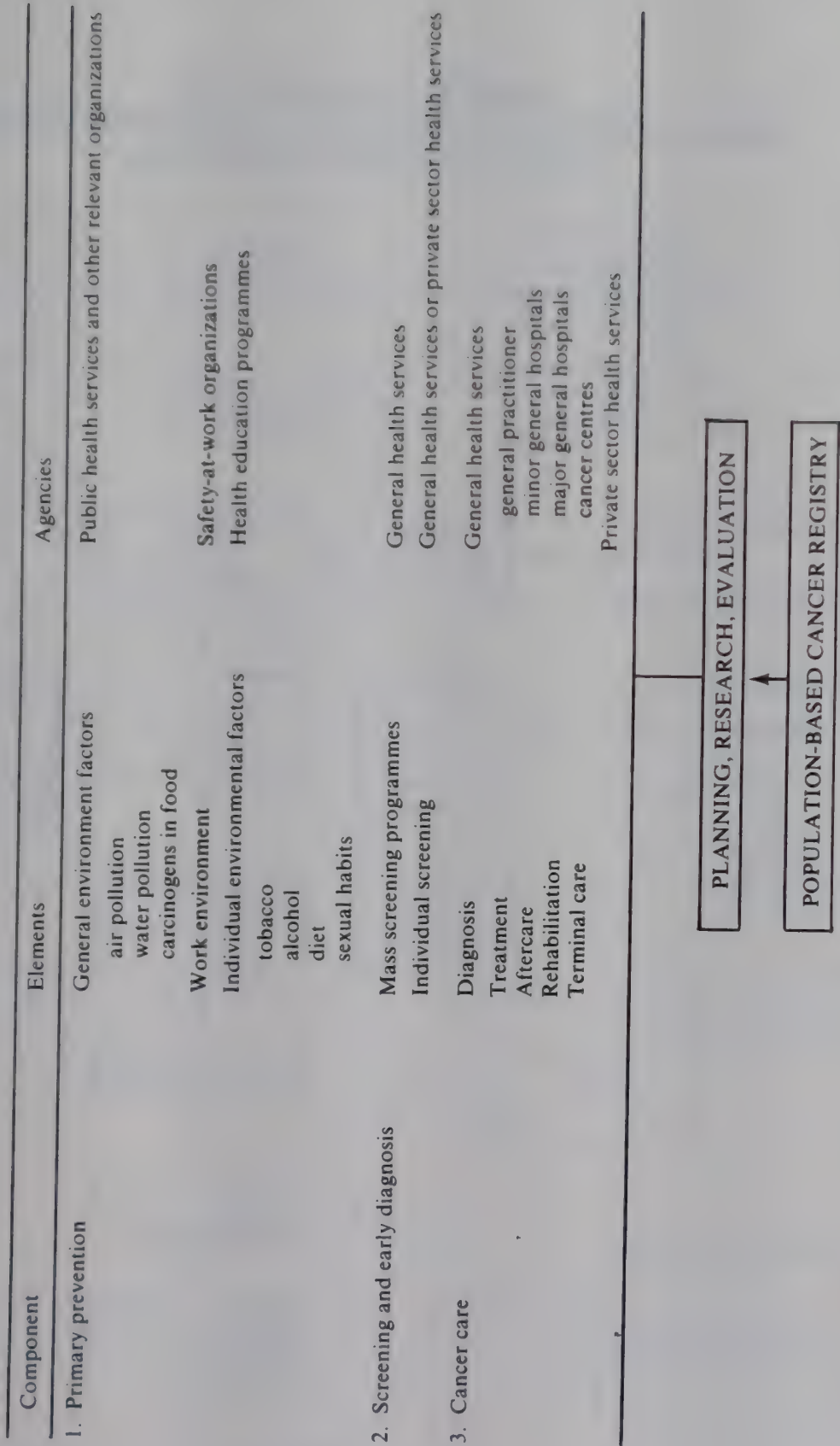
1. National policies for cancer control should be developed within the framework of policies for general health care.
2. Cancer control programmes should have the following objectives:
 - (a) to secure for all patients with cancer an equal and high standard of care, while encouraging the use of agreed medical care protocols for patient management and the concentration of treatment facilities where this is in the best interests of the patient;
 - (b) to assess the state of cancer services and the demands made upon them in order to identify areas that need strengthening;
 - (c) to promote public education on all aspects of cancer, with emphasis on the advantages of early treatment;
 - (d) to promote the further education of all doctors and other health professionals on all aspects of cancer, with emphasis on the need for early diagnosis;
 - (e) to implement measures for primary prevention where feasible;
 - (f) to improve early detection and to implement screening programmes which are of demonstrated effectiveness;
 - (g) to promote the compilation, distribution and understanding of cancer statistics and to encourage their use in the improvement of cancer services;
 - (h) to foster cooperation with local authorities in order to provide the best possible care for cancer patients living at home;
 - (i) to promote the development of rehabilitation services for cancer patients;
 - (j) to assist in the development of humane terminal care; and
 - (k) to promote research and evaluation.

3. National cancer policies should include consideration of the need for cancer centres as an element of the national cancer control programme.
4. It is important to recognize that cancer centres may take two main forms. A comprehensive cancer centre provides all aspects of cancer care in one institution, while a coordinating cancer centre discharges the same functions as a comprehensive centre by coordinating the activities of separate institutions in a geographically defined area, and may alternatively be described as a functional comprehensive cancer centre.
5. The main functions of a cancer centre should be to develop and provide cancer control measures at the highest possible level to the largest possible proportion of the population; to provide training for medical and other health care professionals in cancer care; to conduct basic, clinical and epidemiological research into cancer and to disseminate the results; to evaluate treatment regimens and screening programmes; and to define and implement measures for primary prevention in association with other relevant organizations.
6. The main functions of the community-based cancer programme should be to promote primary prevention and early diagnosis through public and professional education; to provide facilities for early diagnosis and for screening programmes where scientifically justified; to provide diagnostic, treatment, after-care, rehabilitation and terminal care facilities at the highest attainable level; and, through the medium of a population-based cancer registry, to conduct research into needs for cancer care, and to plan and evaluate the services provided.
7. Adequate administrative and secretarial support is essential to the proper functioning of any cancer control programme.
8. The cancer centre and the community-based programme are equally important elements in cancer control and are mutually supportive. Where both exist they must be properly linked to each other and to the general health care services. Mechanisms for this will vary according to local circumstances and it is important that flexibility of approach be maintained.
9. Adequate information is essential for the development of appropriate cancer control programmes and for their evaluation. Consideration needs to be given to the improvement of cancer information systems.
10. Evaluation of cancer care programmes is of great importance, but it is recognized that techniques for overall evaluation are not at present available and that evaluative research should concentrate on specific components of the programme.

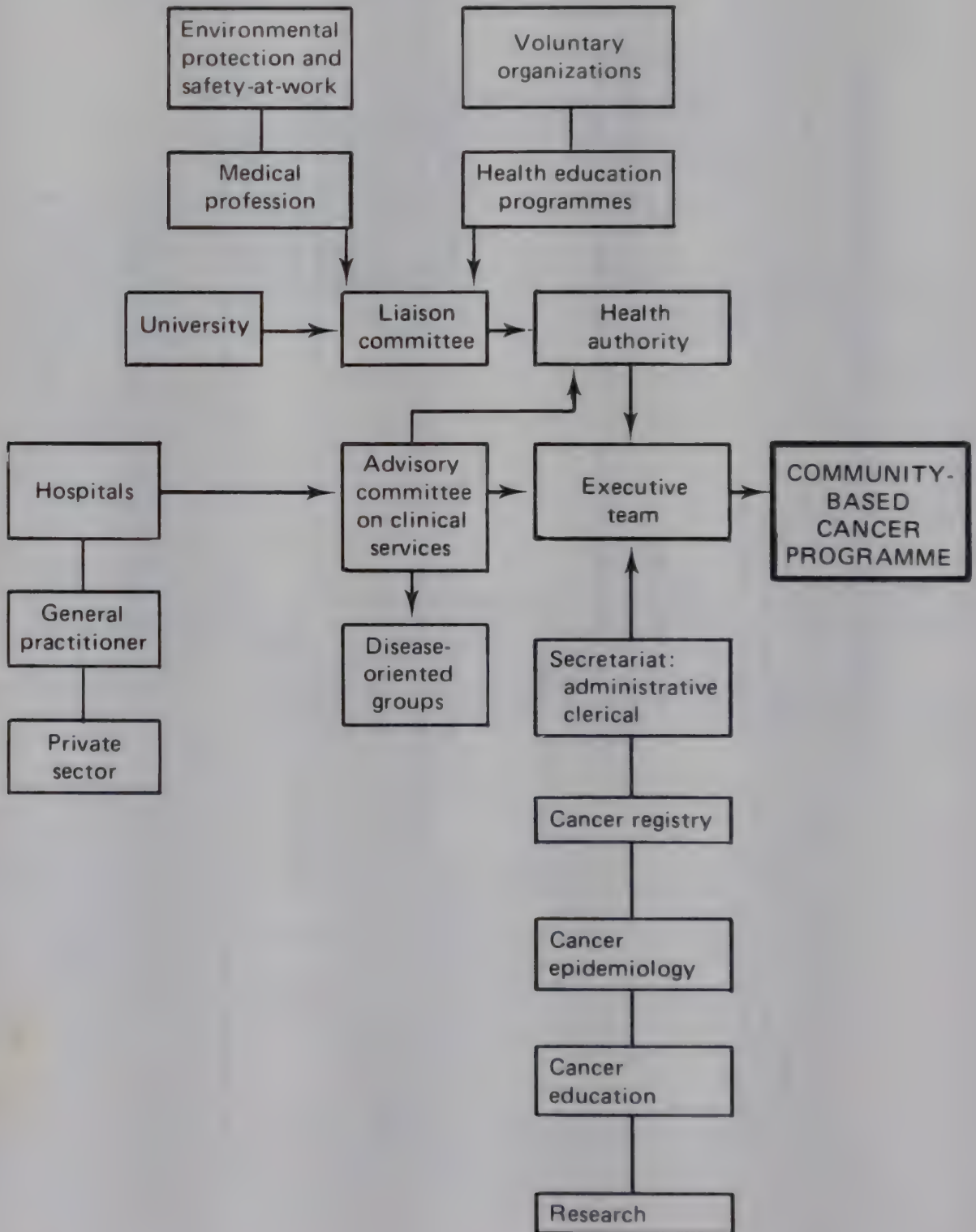
POSSIBLE STRUCTURE FOR A COMPREHENSIVE CANCER CENTRE



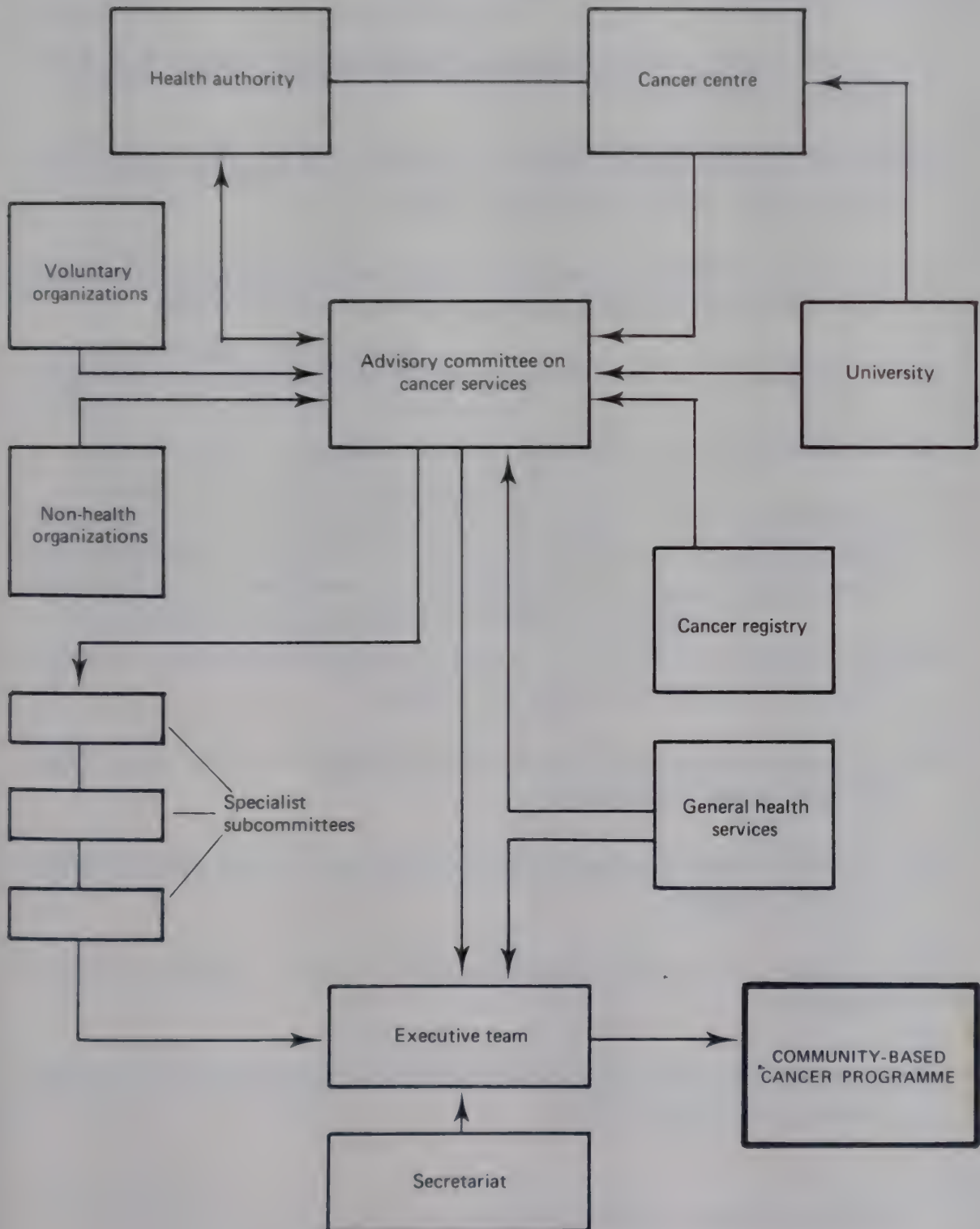
A COMMUNITY-BASED CANCER PROGRAMME



POSSIBLE STRUCTURE
FOR A COMMUNITY-BASED CANCER PROGRAMME
WITHOUT A CANCER CENTRE



POSSIBLE STRUCTURE FOR A COMMUNITY-BASED CANCER PROGRAMME WITH A CANCER CENTRE



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^a Participation expenses not paid by WHO.

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